TORQUE TRANSMITTING APPARATUS

ABSTRACT OF THE DISCLOSURE

A hydrokinetic torque converter with a built-in bypass clutch is provided with an arrangement which regulates the cooling of the clutch at a rate dependent upon the slip between the coaxial driving and driven parts of the clutch, and hence upon the quantity of generated friction heat. The cooling unit for the driving and/or driven part of the clutch can employ, for example, one or more pumps; a supply of a substance which changes its aggregate state from liquid to gaseous or from solid to flowable in response to heating, and vice versa in response to cooling; one or more porous washers in the path for the flow of hydraulic fluid between the customary plenum chambers provided in the housing of the torque converter to move a piston of the driven part of the clutch into and from frictional engagement with the housing; and/or a system of recesses, grooves, channels and/or other passages serving to convey fluid between the chambers at a rate which is higher or highest when the clutch operates with maximum slip. Such rate can decrease to zero when the torque converter is idle or the clutch is fully engaged to operate without slip.